

RIKHTER, V.G., kandidat geologo-mineralogicheskikh nauk.

Pseudotectonic phenomena connected with human activity.

Priroda 46 no.4:83-86 Ap '57.

(MLRA 10:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
(Moskva),

(Earth--Surface)

BAYBULATOVA, Z.K.; LEVIN, A.I.; RIKHTER, V.G.

Relation between the basic structural elements of the Kara-
Bogaz region. Izv. AN SSSR Ser. geol. 29 no.7:52-58 J1 '64
(MIRA 18:1)

1. Nauchno-issledovatel'skaya laboratoriya geologicheskikh kri-
teriyev otserki perspektiv neftegazonosnosti, Moskva.

ALIYEV, M.M.; BORODOVSKIY, O.K.; RIKHTER, V.G.

Basic problems of a combined study of the Casplan Sea.
Izv.AN Azerb.SSR. Ser.geol.-geog.nauk no.2:3-9 '64.

(MIRA 18:11)

ACC NR: AP7010685

SOURCE CODE: UR/0215/66/000/012/0118/0123

AUTHOR: Rikhter, V. G.; Vol'vovskiy, I. S.

ORG: VNII Geofizika

TITLE: Neotectonics as an index of anomalous crustal thicknesses

SOURCE: Sovetskaya geologiya, no. 12, 1966, 118-123

TOPIC TAGS: tectonics, upper mantle, lower mantle

SUB CODE: 08

ABSTRACT: R. M. Demenitskaya has demonstrated that the elevations of the earth's surface are in close functional dependence on the thickness of the earth's crust. Mathematically this relationship is expressed by the formula

$$M = 33th(0.38H - 0.18) + 38,$$

where M is the crustal thickness at a particular point, H is the elevation of the earth's surface above sea level, in km. However, it has been shown that many special curves intersect the generalized R. M. Demenitskaya curve or run parallel to it. In this refinement of that author's work, the authors consider points not falling on this generalized curve (characterizing isostatic equilibrium of the crust) to be anomalous, and seek to interpret

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UDC: 551.241

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28/75

ACC NR: AP7010685

their pattern. However, instead of using heights of relief, as in earlier studies, the authors now use the amplitudes of the most recent tectonic movements. The analysis of thicknesses of the crust and the amplitudes of these recent vertical tectonic movements, illustrated in this paper, revealed a close dependence between the latter and anomalous deviations in crustal thickness. It is concluded that deviations from the R. M. Dement'skaya curve in any direction characterize regions of recent uplifts or downwarings, regardless of their genetic nature. Orig. art. has: 3 figures and 3 formulas. [JPRS: 40,291]

Card 2/2

RIKHTER, Vladislav Gavrilovich; NIKOLAYEV, N.I., red.

[Methods of studying the recent and latest tectonics of
the shelf zones of seas and oceans] Metody izucheniia
noveishei i sovremennoi tektoniki shel'fovykh zon morei i
okeanov. Moskva, Nedra, 1965. 243 p. (MIRA 18:10)

RIKHTEP, V.G., kand. geol.-mineral. nauk (Moskva)

Ancient mud volcanoes on Artem Island. Priroda 54 no.8:92-94
Ag '65. (MIRA 18:8)

ACCESSION NR: AP4018052

S/0006/64/000/002/0023/0027

AUTHORS: Vol'pert, M. I.; Rikhter, V. G.

TITLE: Some geological problems that can be solved by level surveys

SOURCE: Geodeziya i kartografiya, no. 2, 1964, 23-27

TOPIC TAGS: tectonic movement, earth crust, structural form, uplift, depression, anticline, level survey, structural zone, data interpolation, data extrapolation

ABSTRACT: Classification of successively developing structural forms of the earth's crust can be established by running repeated level surveys of the denudation and accumulation surfaces. By this method the contemporary tectonic movements can be determined quantitatively, geological structure may be clarified, structural zones and related valuable deposits (oil, gas, etc) may be located. Repeated level surveys determine the direction and rate of vertical movements, as explained by M. I. Sinyagina, Yu. A. Meshcheryakov, A. A. Izotov, and others. The work consists of determining high-accuracy elevations along the established state survey grid lines and of repeating this process after a period of time. A comparison of the results provides definite answers to the problem of vertical movements. Studies already completed indicate a correlation between tectonic

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ACCESSION NR: AP4018052

movements, thickness of deposits, and the nature of the foundation. When combined with geophysical studies, these survey studies also clarify the relations between the rate of vertical movements, gravity anomalies, magnetic field, etc. While traverses repeated after 30-70 years show elevation differences measurable only in centimeters over large regions, they also show much larger variations on local terraces and denudation surfaces. Low-accuracy and medium-accuracy rapid instruments should be used in the latter cases. The application of automatic altimeter determinations (as described by M. Vol'pert in *Geodeziya i kartografiya*, No. 9, 1960, and by M. Vol'pert and A. Chistyakov in *Strukturno-geomorfologicheskiye issledovaniya v Prikaspii*, 1962) has shown relative terrace movements (since 1959) of 1.5-1.8 m in the Oleynikovskoye and Promyslovskoye uplifts and of 5-6 m in the Prikumskiy region. The automatic altimeter determinations may be replaced by standard surveying, by trigonometric computations, and by barometric studies carried out along lines or polygons based on established bench marks. River terraces should be surveyed along both shores and should extend over at least 2 or 3 surfaces. Sea terraces should be surveyed completely around uplifts which formed islands in the periods of transgressions. Oscillatory movements can also be determined by level surveys along the fracture zones. This application is of a special practical importance because valuable deposits are often associated with

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such zones. In these studies level surveys should be carried across the faults, bench marks should be established 200 m apart, and measurements taken after each 2-3 months. High-accuracy surveys so conducted show oscillation amplitudes of 0.5-0.7 mm in 1 km. When repeated every month, they help in investigating hydrothermally and thermally caused crustal movements and may prevent structures from being placed across mobile zones. It has been suggested by several authors that such studies should be combined with gravimetric investigations. Although only the vertical components of crustal movements were discussed, the presently available equipment makes it possible to measure distances cheaply and rapidly. In the future, the horizontal components of movements will be measured, and the actual resultant displacements will be determined.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 19Mar64

ENCL: 00

SUB CODE: ES

NO REF SOV: 002

OTHER: 000

Card 3/3

VOLPERT, M.I.; RIKHTER, V.G.

Some problems in geology solved by means of leveling. Geod.
Izvest. no.2:23-27 F '64. (MIRA 17:3)

RIKHTER, V.G.

Method for determining the relative age of marine terraces according to the degree of their tectonic deformation. Izv. AN SSSR. Ser. geog. no.4:68-74 J1-Ag '63. (MIRA 16:8)

1. Nauchno-issledovatel'skaya laboratoriya otsenki perspektiv gazonosnosti krupnykh territoriy.
(Terraces (Geology))

RIKHTER, V.G.; SAMSONOV, S.K.

On the last pages of the geological history of the Caspian Sea.
Izv. AN SSSR. Ser. geog. no.6:87-91 N-D '61. (MIRA, 14:12)

1. NII Neftgaz Glavgeologii RSFSR i Institut geologii i razrabotki
goryuchikh iskopayemykh AN SSSR.
(Caspian Sea—Geology)

KLENOVA, Mariya Vasil'yevna; SOLOV'YEV, Vladimir Filippovich;
ALEKSINA, Iya Aleksandrovna; VIKHRENKO, Nina Makarovna;
KULAKOVA, Lidiya Sergeyevna; MAYEV, Yegor Georgiyevich;
RIKHTER, Vladislav Gavrilovich; SKORNYAKOVA, Nadezhda
Sergeyevna; ZENKOVICH, V.P., ~~otv.~~ red.; LEONT'YEV, O.K.,
red. izd-va; IADYCHUK, L.P., red. izd-va; GUS'KOVA, O.M.,
tekhn. red.

[Geology of the subsurface slope of the Caspian Sea]Geolo-
gicheskoe stroenie podvodnogo sklona Kaspiiskogo moria.
[By] M.V.Klenova i dr. Moskva, Izd-vo Akad. nauk SSSR,
1962. 636 p. (MIRA 15:9)

(Caspian Sea--Geology)
(Caspian Depression--Geology)

RIKHTER, V.G.

Some features in the formation of the sculptural relief of Apsheron.
Izv.AN SSSR.Ser.geog. no.3:69-76 My-Je '61. (MIRA 14:5)

1. Kompleksnaya Yuzhnaya geologicheskaya ekspeditsiya..
(Apsheron Peninsula--Erosion)

RIKHTER, V.G.

Vertical movements of the earth crust and fluctuations in the
level of Caspian Sea. Geog. v shkole 24 no.2:16-20 Mr-Apr '61.
(MIRA 14:3)
(Caspian Sea--Coast changes)(Caspian Sea--Submarine geology)

RIKHETER, V.G.; GOFMAN, Ye.A.; MAYEV, Ye.G.

Study of shore lines on the floor of the Caspian Sea. Dokl. AN SSSR
135 no.6:1476-1479 D '60. (MIRA 13:12)

1. Institut geologii i razrabotki goryuchikh iskopayemykh Akademii
nauk SSSR. Predstavleno akademikom A.L. Yanshinym.
(Caspian Sea—Submarine geology)

BEZBORODOV, R.S.; GOFMAN, Ye.A.; RIKHTER, V.G.

Bedding of Bajocian sediments in the northwestern Caucasus.
Izv. AN SSSR. Ser. geol. 25 no. 1:94-97 Ja '60. (MIRA 13:8)

1. Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR,
Moskva.
(Caucasus, Northern--Geology, Stratigraphic)

RIKHTEP, V.G.

History of the caravansary on Baku Bay. Dokl. AN Azerb. SSR 16
no. 3:255-260 '60. (MIRA 13:7)

1. Kompleksnaya yuzhnaya geologicheskaya ekspeditsiya AN SSSR.
Predstavleno akademikom AN AzerSSR M.M. Aliyevym.
(Baku Bay region--Geology, Structural)

GOFMAN, Ye.A.; LOMIZE, M.G.; RIKHTER, V.G.; KHAIN, V.Ye.

Characteristics of the geological development of the northwestern
Caucasus in the lower and middle Jurassic. Izv.vys.ucheb.zav.;
geol.i razv. 3 no.4:43-57 Ap '60. (MIRA 13:7)

Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Caucasus, Northern--Geology)

RIKHTER, V.G.

Role of the tectonic factor in the formation and evolution of
river deltas. Izv.AN SSSR.Ser.geog. no.3:26-33 My-Je '60.
(MIRA 13:6)

1. Kompleksnaya yuzhnaya geologicheskaya ekspeditsiya.
(Deltas)

RIKHTER, V.

Increasing the accuracy of one inequality of S.N.Bernstein
for large deviations. Vest.LGU 14 no.1:24-29 '59.
(MIRA 12:4)

(Inequalities (Mathematics))

3(5)


S/026/60/000/02/008/052
0031/0002

AUTHOR: Rikhter, V.G., Candidate of Geologic-Mineralogical
Sciences

TITLE: Why Have the Predictions Failed? The Movements of the
Earth's Crust and the Fluctuations of the Caspian Sea
Level.

PERIODICAL: Priroda, 1960, Nr 2, pp 45-50 (USSR)

ABSTRACT: The article contains a generalization of the material
available on the present tectonics of the Caspian Sea
depression. It points out its significance and that a
correct solution of the problem of the Caspian Sea
level can be obtained only by considering the results
of studies on the present vertical movements of the
earth's crust and on the basis of climatic data. The
drop and rise of the Caspian Sea level have been known
for a long time. With the help of historical documents,



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D031/D002

Why Have the Predictions Failed? The Movements of the Earth's Crust
and the Fluctuations of the Caspian Sea Level.

it is possible to restore the heights of the sea level for the past 2,000 years. The fluctuations are due to many factors among which the water intake and discharge play a great role. But also the present vertical movements of the earth crust change the holding capacity of the sea's depression and influence its level. The "tectonic" fluctuation theory of the Caspian Sea level was developed in the works of K.M. Ber, G.V. Abikh, N.I. Andrusov, A.D. Arkhangel'skiy, L.P. Gerasimov and many other geologists. They based their opinion on the history of the basin and the region's development during the Neogene - quaternary period. They regarded the rise and fall of the sea's level during the last centuries as one of several moments in the life of the basin

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D031/D002

Why Have the Predictions Failed? The Movements of the Earth's Crust
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characterized by a complicated geological history and structure. They admitted that climatic factors also play a considerable part in inland water basins. Starting from hydro-meteorological prerequisites, B.D. Zaykov summed up the water storage elements of the Caspian Sea, and they apparently fully confirmed the climatic theory and furnished material for predictions of the sea's level so much needed for systematically conducting the national economy. In fact, the climatic theory proved incapable of furnishing a founded prediction even for several years in advance. A conference on the Caspian Sea level in 1956 passed a decision indicating that the level will systematically drop during the coming year. But in 1957 the sea level began to rise intensively, and this process continues in spite of the

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D031/D002

Why Have the Predictions Failed? The Movements of the Earth's Crust
and the Fluctuations of the Caspian Sea Level.

fact that the flow of the Volga has fallen. In examining the cause for the uncertainty in predicting the Caspian Sea level on the basis of climatic forecasts, the author quotes A.V. Voznesenskiy who stated that it will scarcely be possible to explain the large level fluctuations only by climatic variations [Ref. 1, p 46]. For a correct solution of the problem data on the present vertical movements of the earth crust should be employed. The author explains the basic laws of these movements and how they manifest themselves. He comes to the conclusion that in the Caspian Sea, the present tectonics follow in a general outline the same movements which developed during the last 28 to 30 million years. At present, the northern part of the Caspian Sea experiences, apparently,

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S/026/60/000/02/008/052
0031/0002

Why Have the Predictions Failed? The Movements of the Earth's Crust
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very weak downward movements, whereas the southern part
most probably gradually rises. The present vertical
movements are characterized by irregularity in time,
while in some districts a periodicity in the vertical
movements can be recorded by the fluctuating level
established by the water measuring posts. There are 29
such posts located along the Caspian Sea coast which
carry out observations over a long period of time. The
processing of the results showed that the speed of the
movements varies [Ref 1, p 48]. From 1922/23 to 1938/40
a relative stability was observed in all geotectonic
zones of the Caspian Sea. From 1938/40 to 1957 a con-
siderable activity of the vertical movements was noted.
On this point more details are given in the article.
The author then examines to what extent the present

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3/026/60/000/02/008/052
D031/D002

Why Have the Predictions Failed? The Movements of the Earth's Crust
and the Fluctuations of the Caspian Sea Level.

vertical movements in the Caspian Sea influence the water level. He calculated the sea's water storage by years using B.D. Zaykov's calculations [Ref 1, p 48] which are carried up to 1945. Primarily, the level is determined by the influx and flowing off of water masses. From 1944 to 1950 the water level did not rise in spite of a large influx. The author comments on this conflicting phenomenon which is usually explained by the so called inertia of the Caspian Sea. The author rejects this explanation and believes that the increased tectonic activity accounts for this phenomenon. He points out that the study of the character and intensity of the present earth crust movements can give a satisfactory reply to a number of puzzling questions on the behavior of the Caspian

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3/026/60/000/02/008/052
D031/D002

Why Have the Predictions Failed? The Movements of the Earth's Crust
and the Fluctuations of the Caspian Sea Level.

Sea Level. There are 6 graphs, 1 map and 4 Soviet re-
ferences. ✓

ASSOCIATION: Kompleksnaya Yuzhnaya geologicheskaya ekspeditsiya Aka-
demii nauk SSSR, Moskva (Joint Southern Geological Ex-
pedition of the USSR Academy of Sciences, Moscow).

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3 (5)

SOV/20-126-2-39/64

AUTHOR:

Rikhter, V. G.

TITLE:

Certain Features of the Modern Tectonics of the Caspian Sea Depression (Nekotoryye cherty sovremennoy tektoniki vpadiy Kaspiyskogo morya)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 2, pp 367-370 (USSR)

ABSTRACT:

The author mainly deals with the results of the foot rule observations (futshtochnyye nablyudeniya), in order to determine the recent perpendicular movements of the coasts of the Caspian Sea. By way of introduction, all specific features of the investigations and the methods employed in the isolated inland sea ^{are} reviewed. The best choice of a foot rule is that of Makhachkala, which is relatively stable. Continuous observations of these movements are available since 1900. By deducting the yearly-average sea-gauge readings from the readings at other gauge-locations, the deviation which characterizes the rate and symptoms of the recent perpendicular movement at these other points with regard to the foot rule is obtained. The resulting readings of 29 gauges in the Caspian Sea have shown very interesting

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Certain Features of the Modern Tectonics of the
Caspian Sea Depression

SOV/20-126-2-39/64

rules holding for the distribution of the earth's crust formations. Two different periods, one from 1920-23 till 1937-1940 and the other from 1937-40 till 1957 (Fig 1) were determined. The first period showed very little divergencies in the gauge variation at all points in the Caspian Sea. In the succeeding years there arises a somewhat intensive tectonic stimulation. Unfortunately, the observations at individual gauges are only of very short duration and also unsatisfactory. The results obtained, drawn-up on a tectonic map (Ref 2), show a close relationship between the direction and rate of recent movements and the biogeny of this or that area. It is evident that the recent risings and fallings are hereditary. The rates on the other hand, and partly the signs, are variable in the course of time. The causes of these irregularities are to be sought in the periodicity of the earth crust's fluctuations. Lesser fluctuations then settle upon the inherited movements, and there arises a peculiar "interference" by waves of different magnitudes. There are 1 figure, 1 table, and 2 Soviet references.

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Certain Features of the Modern Tectonics of the
Caspian Sea Depression

SOV/20-126-2-39/64

ASSOCIATION: Kompleksnaya yuzhnaya geologicheskaya ekspeditsiya pri
Otdelenii geologo-geograficheskikh nauk Akademii nauk SSSR
(Multi-purpose Southern Geological Expedition of the
Department of Geologic-geographic Sciences of the Academy of
Sciences, USSR)

PRESENTED: January 24, 1959, by A. A. Grigor'yev, Academician

SUBMITTED: January 23, 1959

Card 3/3

RIKHTER, V.G.
KHAIN, V.Ye.; AFANAS'YEV, S.L.; BURLIN, Yu.K.; GOFMAN, Ye.A.; LOMIZE, M.G.;
RIKHTER, V.G.

New data on the geology of the northwestern Caucasus (between the
Tuapse and Lazarevskoye intersections). Biul. MOIP. Otd. geol. 32
no.6:132-133 N-D '57. (MIRA 11:4)
(Caucasus, Northern--Geology)

RIKHTER, V.G.

Evaluation of the repeated leveling method in the study of modern
tectonic movements. Izv. MGIP. otd. geol. 32 no.2:105-120 Mr-Ap
'57. (MIRA 11:3)

(Geology, Structural)

KHAIN, V. Ye., AFANAS'YEV, S. L., BURLIN, Yu. K., GOFMAN, Ye. A., LOMIZE, M. G.
and RIKHTER, V. G.

RIKHTER

"New Data on the Geology of the North-Western Caucasus"

report delivered in the Geologic Section, 1 March-4 June 1957.

Chronicle of the Activity of the Geologic Section, Byulleten' Moskovskogo
Obshchestva Izpytateley Prirody, Otdel Geologicheskoy, No. 6, p. 115-118, 1957.

Rikhter, V. G.

5-6-19/42

AUTHORS: Khain, V.Ye., Afanas'yev, S.L., Gofman, Ye.A., Lomize, M.G.,
and Rikhter, V.G., Burlin, Yu.K.

TITLE: New Data on the Geology of the North-Western Caucasus (Novyye
dannyye po geologii severo-zapadnogo Kavkaza) Between the
Tuapse and Lazarev Crossings (mezhdue Tuapsinskim i Lazarevs-
kim peresecheniyami)

PERIODICAL: Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel
Geologicheskiiy, 1957, # 6, pp 132-133 (USSR)

ABSTRACT: A Caucasian expedition of the MGU, composed of the authors
of this paper, carried out during 1955 to 1956 a detailed map-
ping in the upper parts of the rivers Pshekha, Pshish and Ashe.
The expedition studied the following three structural zones of
this territory: 1. The monoclinorium of the northern slope; 2.
the central anticlinorium; and 3. the flysch zone of the southern
slope.

As a result of these explorations, the stratigraphy of the
Lower- and Middle-Jurassic deposits was clarified in details and
differences in the structure of their columnar sections were
discovered. These differences are connected with the structural
zonation and deep breaks.

AVAILABLE: Library of Congress
Card 1/1

Seismic, V.A.; RUMBY, V.A.

Seismic prospecting of sloping plateaus and mountains and
along in the trans-Alpine portion of the Alpine range. Summary.
1 prom. geofiz. n. 49: 263, 1961

RIKHTER, V.I.

Necessity for taking refraction into consideration in the interpretation of seismic prospecting materials on Neogene fields.
Geofiz. razved. no.16:17-24 '64. (MIRA 18:2)

RIKHTER, V.I.; ZAYDEL'SON, I.I.

Means for constructing and interpreting time sections. Neftegaz.geol.
i geofiz. no.1:45-48 '65. (MIRA 18:5)

1. Kuybyshevneftegeofizika.

L 60147-65 EWT(1)/EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b)/EWA(h)/EWA(c) Pr-4/Peb

JD/HW/GW

ACCESSION NR: AP5018884

UR/0387/65/000/007/0106/0114

550.834

AUTHOR: ⁴⁴Zaydel'son, I. I.; ⁴⁴Redkolis, V. A.; ⁴⁴Rikhter, V. I.

35
33
B

TITLE: Use of the electrohydraulic effect in seismic prospecting

SOURCE: AN SSSR. Izvestiya. Fiziki zemli, no. 7, 1965, 106-114

TOPIC TAGS: seismography, ⁴⁴electrohydraulic effect, seismic prospecting, seismic activity

ABSTRACT: The paper describes the electrohydraulic effect and the equipment used to generate electrohydraulic discharges in the field as a source of seismic waves. Field work is described which was carried out near Kinel' in the Kuybyshev District using an electrohydraulic source. This field work was aimed primarily at the determination of optimum characteristics for a system for seismic prospecting, using electrohydraulic discharges. Recordings of seismic waves set up by these discharges are shown and analyzed. It was found that it is theoretically possible to record reflections from sedimentary geologic strata using electrohydraulic discharges as a source. The amplitude of the seismic trace for discharge of an 87.5 mf battery of

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ACCESSION NR: AP5018884

condensers at 24 kv, is comparable to the trace amplitude for an explosion of 20-25 gm of TNT. The optimum effect may be obtained at relatively low voltages by increasing the total capacity of the condensers. The resolution of the seismic trace when an electrohydraulic source is used is higher than for explosions while the low-frequency interference level is lower. Suggestions are given for increasing the effectiveness of the source, and for applications in fields other than seismic prospecting. Orig. art. has: 3 figures.

ASSOCIATION: Kuybyshevneftegeofizika 44

SUBMITTED: 17Feb64

ENCL: 00

SUB CODE: ES

NO REF SOV: 002

OTHER: 000

Card

2/2

RIKHTER, V.I.

Interference waves on Neogene fields, countermeasures, possibilities
of their utilization. Razved. geofiz. no.4:18-36 '65. (MIRA 18:9)

OREKHOVSKIY, F.V.; RIKHTER, V.I.

Selecting the proper density of seismic observation networks.
Razved. i prom. geofiz. no.37:3-8 '60. (MIRA 14:3)
(Kuybyshev Province—Seismic prospecting)

RIKHTEP, Vol'fgang (Leningrad)

Local limit theorems for great deviations [with summary in German].
Teor. veroiat. i ee prim. 2 no.2:214-229 '57. (MLRA 10:11)
(Limit theorems (Probability theory))

RIKHTEK, Vol'fgang

Local limit theorems for large deviations. Dokl. AN SSSR 115
no.1:53-56 J1-Ag '57. (MIRA 10:11)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova.
Predstavleno akademikom I.M.Vinogradovym.
(Distribution (Probability theory))

RIKHTER, Vol'fgang

20-1-13/54

AUTHOR: Rikhter, Vol'fgang

TITLE: Local Limiting Theorems for Large Deviations
(Lokal'nyye predel'nyye teoremy dlya bol'shikh ukloneniye)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 1, pp. 53 - 56
(USSR)

ABSTRACT: The sequence of the independent accidental quantities X_1, X_2, \dots with the distribution functions $V_1(x), V_2(x)$ be assumed. Further its dispersions $DX_j = \sigma_j^2$, $\sum_{j=1}^n \sigma_j^2 = s_n^2$ may exist. Its mathematical expectations can without limitation of the generality be equated with zero. The author here designates $M_j(z) = Ee^{zX_j} = \int_{-\infty}^{\infty} e^{zx} dV_j(x)$ as deriving function of the moments of the quantity X_j and puts $z_n = \sum_{j=1}^n X_j/s_n$.
This paper gives several local limiting theorems for the case of large deviations, i.e. for such x which indefinitely increase with n . Reference is made to several relevant earlier works. The transformation of certain theorems of probability contained in these papers, leads to a certain success in the solution of

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Local Limiting Theorems for Large Deviations

the problem of large deviations, which is, however, not cleared up in these earlier works. This transformation is according to its nature a hidden employment of the saddle point method from the theory of the functions of a complex variable. The proofs of the here-given theorems are according to their structure analogous to the proof of Cramer's theorem, but here the saddle point method is consistently employed. This furnishes local theorems for uniformly distributed quantities, also in the presence of a density and in the case of lattice-like summands. The author further gives a local theorem for inhomogeneously distributed quantities. These theorems and several corollaries resulting from them are then given. There is not figure.

ASSOCIATION: Leningrad State University imeni A.A. Zhdanov
(Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova)

PRESENTED BY: I.M. Vinogradov, Academician, January 28, 1957

SUBMITTED: December 21, 1956

AVAILABLE: Library of Congress

Card 2/2

ZNAMENSKIY, V.V.; RYABINKIN, L.A.; PETROV, L.V.; VARTANOV, S.P.;
GAGEL'GANTS, A.A.; KOTLYAREVSKIY, B.V.; LOZOVSKAYA, I.F.;
LYAKHOVITSKIY, F.M.; MAR'IN, N.I.; OSTROVSKIY, V.D.; PARIYSKAYA,
G.N.; RIKHTER, V.I.; RUBO, V.V.; SLUTSKOVSKIY, A.I.; TARUTS,
G.M.; TURCHANENKO, N.M.; SHMIDT, N.G.; SHNEYERSON, M.B.; GURVICH,
I.I., red.; BORUSHKO, T.I., red.izd-va; GUROVA, O.A., tekhn. red.

[Instructions for seismic prospecting]Instruktsiya po seismoraz-
vedke. Moskva, Gosgeoltekhizdat, 1962. 95 p. (MIRA 15:12)

1. Russia (1923- U.S.S.R.)Ministerstvo geologii i okhrany neдр.
(Seismic prospecting)

RIKHTER, V.I.

Use of numerical integration in determining effective velocities.
Razved. i prom. geofiz. no.30:10-14 '59. (MIRA 12:12)
(Prospecting--Geophysical methods)

RIKHTER, Ya.A.

New area of the development of an early nickel-bearing weathered
surface on ultrabasic rocks in the northern Mugodzhar. Uch.zap.
SGU 74:253-255 '60. (MIRA 15:7)
(Mugodzhar Hills--Nickel)
(Mugodzhar Hills--Weathering)

RIKITER.YU.

Phenylsulfonamide derivatives of pyridine. 1. Ph. Zhuk and Yu. Lukatskiy. *Zhur. Obshch. Khim.* (J. Gen. Chem.) 18, 1151 (1948). 3-Aminopyridine (4.5 g.) in 40 ml. pyridine treated with 10 g. p -AcNH CH_2SO_2Cl (I), warmed 10 min. on a steam bath, and dild. by 200 ml. H $_2$ O gives 3-(1-(4-acetamidophenylsulfonamido)pyridine), colorless, m. 282° (from dil. pyridine); hydrolysis by 4 vols. 45% HClO $_4$ 5 hr. on a steam bath and neutralization by NH $_4$ OH gives 3-(1-(4-aminophenylsulfonamido)pyridine) (II), plates, m. 262° (from dil. pyridine), almost insol. in EtOH or water, sol. in AcOH, Na 2 CO $_3$, sol. in N NaOH, NH $_4$ OH, mineral acids. Similarly, 3,5-diaminopyridine (2 g.) and I (9 g.) after treatment as above and acidification by HCl gave 3-(1-(4-aminophenylsulfonamido)pyridine), m. 285° (from 70% EtOH), sol. in carbonate solns., insol. in dil. HCl; hydrolysis as above gave 3-(1-(4-aminophenylsulfonamido)pyridine (after neutralization by NH $_4$ OH), m. 261° (from pyridine-EtOH-water), sol. in acids and alk. I. 3-Dimethylamino-5-aminopyridine similarly gave the 1-acetamido deriv., m. 237° (from dil. EtOH), which on hydrolysis as above gave 3-(1-(4-aminophenylsulfonamido)pyridine, m. 232° (from dil. EtOH), insol. in dil. NH $_4$ OH or NaHCO $_3$, sol. in acids. I and 2,6-diaminopyridine gave the condensation product, m. 281° (from EtOH), which on hydrolysis gave 2,6-bis-(1-aminophenylsulfonamido)pyridine, m. 257° (from EtOH-pyridine), in this case the hydrolysis

of the Ac deriv. is best done by 1-5 KOH 0.5 hr. on a steam bath, followed by acidification with AcOH. Treatment of I (1.7 g.) with 5 g. II in pyridine, as above, gave 3-(1-(4-acetamidophenylsulfonamido)phenylsulfonamido)pyridine, m. 231° (from EtOH-water-pyridine), which on hydrolysis gave 3-(1-(1-aminophenylsulfonamido)phenylsulfonamido)pyridine, m. 268° (from EtOH-H $_2$ O-pyridine), sol. in aq. NaHCO $_3$ and NH $_4$ OH. I and 2,5-diaminopyridine gave 2-(1-(4-acetamidophenylsulfonamido)pyridine), m. 312° (from dil. EtOH), which on standing 20 hrs. with 10 vols. 50% KOH gave 2-(1-(4-aminophenylsulfonamido)pyridine, m. 210° (from EtOH), sol. in NaHCO $_3$ and NH $_4$ OH. Heating the di-Ac deriv. with 15% HCl leads to a loss of a sulfonamido group, with formation of 2-aminos-(1-aminophenylsulfonamido)pyridine, m. 211° (from EtOH), insol. in NaHCO $_3$ or dil. NH $_4$ OH. Sulfapyridine and I similarly give the condensation product, colorless powder (from dil. EtOH), which on hydrolysis by 5 parts 20% KOH 0.5 hr. on a steam bath gives 2-(1-(4-aminophenylsulfonamido)phenylsulfonamido)pyridine, m. 237° (from dil. EtOH), sol. in dil. NaHCO $_3$ and NH $_4$ OH.

G. M. Kosolapoff

Chen Ong Chuen - I'vov Polytech. Inst.

... Y.

... of RMMA, Li, The benz-sulfonide derivative of pyridine, p. 114

... report on the synthesis of benz-sulfonide containing the sulfonide group in pyridine nuclei. The synthesis of several preparations is described.

... of ... of the Low Polytechnical Institute

... 1955

... of ... Chemistry (1955) 17 (10) No. 4 (1955)

RIKHTEP, Zinaida

Moscow-Peking. Kryl. rod. 9 no. 8:18-20 Ag '58.
(Aeronautics--flights)

(MIRA 11:8)

AUTHOR: Rikhter, Zinaida

Sov/85-58-8-23/40

TITLE: Moscow-Peking (Moskva-Pekin)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 8, pp 18-20 (USSR)

ABSTRACT: The author describes a 1925 Moscow-Peking flight in which she participated. She contrasts this flight with one made in August 1956 by the TU-104, which covered the same distance of almost 7,000 km. in 8 hours flying time.

Card 1/1

RIKHTER, Z.

Hydroelectric Power Stations

Where the second Dnieper will flow. Rabotnitsa 30, No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.

RIKHTER, Zh.

PHASE I BOOK EXPLOITATION

SOV/5975

International Institute of Welding

XII kongress Mezhdunarodnogo instituta svarki, 29 iyunya - 5 iyulya 1959 v g.
Opatii (Twelfth Annual Assembly of the International Institute of Welding.
Opatija, June 29 - July 5, 1959) Moscow, Mashgiz, 1961. 359 p. 3000
copies printed.

Sponsoring Agency: Natsional'nyy komitet SSSR po svarke.

Ed. (Title page): G. A. Maslov, Docent; Translated from English, French,
and Serbo-Croatian by N. S. Aborenkova, K. N. Belyayev, E. P. Bogacheva,
L. A. Borisova, K. V. Zvegintseva, V. S. Minavichev, and M. M. Shelechnik;
Managing Ed. for Literature on the Hot-Working of Metals: S. Ya. Golovin,
Engineer.

PURPOSE: This collection of articles is intended for welding specialists and
the technical personnel of various production and repair shops.

Card 1/1

22

Twelfth Annual Assembly (Cont.)

SOV/5975

COVERAGE: The collection contains abridged reports presented and discussed at the Twelfth Annual Assembly of the International Institute of Welding. Reports deal with problems of welding and related processes used in repair work, repair techniques, and the problems arising in connection with the nature of the base and filler materials. Examples of repairing various parts are given, and the organization of repair operations in workshops and under field conditions is discussed. Economic aspects of welding and related processes as used in repair work are analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS: [Only Soviet and Soviet-bloc reports are given here]

Foreword

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PART I. THE STUDY OF REPAIR-WORK TECHNIQUES
(PROCESSES, METHODS, PREPARATION, HEATING, AND
OTHER TYPES OF PROCESSING CONTROL)

Myuntsner, L. (Czechoslovakia). Welding of Broken Crankshafts

36

Card 2/9

Twelfth Annual Assembly (Cont.)

SOV/5975

Yemel'yanov, N. P. (USSR). The Use of Multielectrode Automatic Submerged-Arc Welding in Repairing Railroad Rolling Stock

104

Prosenits, V., and P. Shtular (Yugoslavia). Manufacture of Cutting Tools by Hard Alloy Build-Up With Argon Shielded Arc Welding and the Process Viewed From the Standpoint of Economy

114

PART II. PROBLEMS IN REPAIR WORK ARISING IN CONNECTION WITH THE NATURE OF THE BASE AND FILLER MATERIALS AND THE REQUIRED OPERATIONAL PROPERTIES (WITH CONSIDERATION OF WELDABILITY, WARPAGE, AND INTERNAL STRESSES)

Rikhter, Zh. (Yugoslavia). Welding of the Al-Mg-Si Alloy and Problems of the Dynamic Strength of Welded Joints

128

Card 4/9

RIKHTER, ZINAIDA

On (Petroleum Kombinat); urban Development; oil and related industries; Mechanical work

Soviet Source: P: Ogonek #34 (Moscow Aug 1946)

Abstracted in USAF "Treasure Island," on file in Library of Congress, Air Information
Division, Report No. 77562-73

RIKHTER, Zinaida Vladimirovna

RIKHTER, Zinaida Vladimirovna.....Po Laplandii. Moskva, "Ogonek", 1929. 46 p.
(Biblioteka "Ogonek", no. 413)

DLC: Unclass.

SO: LC, Soviet Geography, Part II, 1951/Unclassified

RIKHTER, Zinaida Vladimirovna

RIKHTER, Zinaida Vladimirovna. V snegakh El'brusa. Vo l'Dakh arktiki. Za ploiarным krugom. Moskva, "Khudozhestvennaia literatura", 1936. 349 p.

DIC: Unclassified

SO: LC, Soviet Geography, Part II, 1951, Unclassified

RIKHTEP, Zinaida Vladimirovna.

RIKHTEP, Zinaida Vladimirovna. V solnechnoi Abkhazii i Khevsuretii. Moskva,
"Fizkul'tura i turizm", 1930. 62 p. (Biblioteka proletarskogo turista).
DLC: Unclass.

SO: LC, Soviet Geography. Part II. 1952/Unclassified.

RIKHTEK, Zinaida Vladimirovna.

RIKHTEK, Zinaida Vladimirovna. V strane golubyykh ozer (ocherki Altaia). Moskva, Molodaia gvardiia, 1930. 157 p. (Biblioteka ekspeditsii i puteshestvii).

DLC: Unclass.

So: LC, Soviet Geography, Part II, 1951/Unclassified.

RIKHTER, Zinaida Vladimirovna

RIKHTER, Zinaida Vladimirovna. Aldan. Moskva, "Ogonek", 1928. 47 p. (Biblioteka
Ogonek, no. 343.). DEC: Unclass.

SO: IS, Soviet Geography, Part II, 1951/Unclassified

RIKTER, Zinaida Vladimirovna.

RIKTER, Zinaida Vladimirovna. Zolotoi Aldan. Moskva, Gosizdat, 1927. 147 p.
CtY IN

SO: IC, Soviet Geography, Part II, 1951/Unclassified

RIKHTEROVA, Ye.

T-5

CZECHOSLOVAKIA/General Problems of Pathology - Tumors.

Abs Jour : Ref Zhur - Biol. No 3, 1958, 12709

Author : Puyman, V., Dolezhelova, V., Prokopova, S., Rikhterova, Ye.

Inst : Not given

Title : The Effect of Antileukemic Agents on Leukemic and Leukemoid Changes.

Orig Pub : Chemotherapeutica, I. Farmac. sympos. Praha, 1956, 31-33

Abstract : A study of the effects of 6 mercaptopurine, myleran cortisone, Compound 604 (gamma-methoxyphenyl-alpha, beta-dichlorocrotonlactone) and Compound 604 Br (gamma-r-methoxyphenyl-alpha, beta-dibromocrotonlactone) on mice of AKR and H strains that had received transplants of leukemia LPAK-VUFB and sarcoma 180 has shown that 6-mercaptopurine and Cmd. 604 interfere with the development of leukemia; 6-mercaptopurine also decreases the weight of the leukemic

C Card 1/2

RIKHOVITSKY, S. V., SEMENOVSHKIN, I. N., VYSOCHANSKIY, M. MUKHIN, S. V.
and TSUN TSIN, PIN.

"Multichannel Coincidence System with Short Pules Intervals"

Joint Institute of Nuclear Research, Dubna, USSR.

report submitted for the IAEA conf. on Nuclear Electronics, Belgrade, Yugoslavia
15-20 May 1961

VYSOCHANSKIY, M.; MIKHIN, S.V.; PIN TSUN: TSIN [Ping TS'un-ch'ing];
RIKHVITSKIY, S.V.; SEMENYUSHKIN, I. N.

Multichannel coincidence circuit with a short separation time.
Prib.i tekhn.eksp. 6 no.5:67-71 S-0 '61. (MIRA 14:10)

1. Ob'yedinennyy institut yadernykh issledovaniy.
(Electronic circuits)

L 47073-65 EWI(1)/EEC(b)-2/EWA(h) Feb

ACCESSION NR: AP5011876

UR/0120/65/000/002/0088/0091

AUTHOR: Vysochanskiy, M.; Mukhin, S. V.; Rikhvitskiy, S. V.;
Semenyushkin, I. N.; Foltin, I.

24
23
B

TITLE: Multiplier phototube as a nanosecond coincidence circuit

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 88-91

TOPIC TAGS: multiplier phototube, photomultiplier, coincidence circuit

ABSTRACT: A h-f-controlled multiplier phototube (FEU-36) was experimentally used as a device for detecting coincidence between the positive half-wave of the control voltage and a short-time light flash. One-nanosecond light flashes with a repetition frequency of 190 cps were obtained from the mercury relay of a GKI-4B pulse generator and compared with a 70-Mc control voltage applied to one of the dynodes. It is believed that the above method can reduce the effect of time spread of the photomultiplier output pulses on the resolution of the coincidence device.

"The authors wish to thank V. M. Vishnyakova, A. N. Khrenov, and M. H. Shkobina who took part in the measurements." Orig. art. has: 5 figures and 2 formulas.
[03]

Card 1/2

L 47073-65

ACCESSION NR: AP5011876

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 14Feb64

ENCL: 00

SUB CODE: EC

NO REF SOV: 001

OTHER: 003

ATD PRESS: 4001

bjo
Card 2/2

RIKICKAJA, M. S.

"Sur la mecanism de l'oxydation des composes organiques au moyen de l'anhydride selenieux. Communication III." Melinkov, N. N. et Rikickaja, M. S. (p. 838)

SO: Journal of General Chemistry (Zhurnal Obsheei Khimii) 1938, Vol. 8, No. 9

RIKIN, Samuil Simonovich; OSTROMUKHOV, Ya.G., inzh., retsenzent; SLIV,
E.I., kand.tekhn. nauk, retsenzent; CHERKOV, R.I., kand. fiz.-
mat. nauk, nauchnyy red.; KLIMINA, Ye.V., red. izd-va; FRUMKIN,
P.S., tekhn. red.

[Theory of gyroscopic devices] Teoriia giroskopicheskikh ustroistv.
Leningrad, Sudpromgiz. Pt.1. 1962. 506 p. (MIRA 15:7)
(Gyroscopic instruments)

KIKIND, A. V.

1200. Arterio-venous Anastomoses in the Pulmonary Circulation. IV. Arterio-venous Anastomoses in Visceral and Parietal Pleura and Pleural Adhesions; Data on Histogenesis of Occluding Arteries. (Об артерио-венозных анастомозах малого круга кровообращения. IV. Артерио-венозные анастомозы легочной и пристеночной плевры и плевральных спаек; материалы к гистогенезу замыкающих артерий) A. V. KIKIND. Архив Патологии [Arch. patol.] 11, No. 4, 62-69, July-Aug., 1949. 8 figs., 3 refs.

The author has described and discussed arterio-venous anastomoses in the lungs in his previous papers. The occluding arteriole which serves as a functional link in such anastomoses is also found in the visceral and parietal pleura, the diaphragm, in the sub-peritoneal fat of the abdominal surface of the diaphragm, and in the adhesions between the two layers of the pleura, when such adhesions exist. Its development can be traced to the granulation tissue formed at the site of old inflammatory lesions, but it can also be formed by the functional adaptation of pre-existing arterioles.

Abstracts of World Medicine Vol 7 1950

111

PROCESSES AND PROPERTIES INDEX

ANALYSIS OF METALLIC ANTIMONY. I. E. Rikert (*Zhur. Priklad. Khimii*, 1937, 10, (6), 1122-1129). [In Russian.] A method of analysis is described in which Pb, Cu, Bi, Cd, Fe, Ni, Zn, and Al are all determined in one sample, separate samples being used to determine S and As. N. A.

ASB 31A METALLURGICAL LITERATURE CLASSIFICATION

147030

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KHEL'P, F. [Relp, K.]; BASNEV, S.P.; RIKK, E.; TIMOFEYEV, I.A.; TUL'P, M.
[Tulp, M.]

One of the possible efficient ways to use tunnel gas. Khim. i tekhn.gor.
plan. i prod. ikh perer. no.12:106-111 '63. (MIRA 17:2)

PUTSEYKO, O.K.; RIKKEN, L.A.

Influence of radon baths on hypertension patients as shown by
electrocardiographic data. Vop. kur., fizioter. i lech. fiz.
kul't. 24 no. 4:301-305 J1-Ag '59. (MIRA 13:8)

1. Iz kardiologicheskogo sanatoriya na Kirovskikh ostrovakh
v Leningrade (glavnyy vrach V.N. Vvedenskiy, nauchnyy rukovoditel' -
prof. M.I. Khivilivitskaya).
(RADON--THERAPRUTIC USE) (HYPERTENSION)

LIHAKS, V.

Extraction of phenols from middle fractions of shale tar and their use for synthesis of oil-soluble phenolformaldehyde tars.

p. 203 (Trudy) No. 2, 1956, Tallin, Estonia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

VOORE, H.; KORV, M.; KUDRYAVTSEV, I.B.; RIKKEN, V.; STEPANOVA, G.G.;
TOMSON, T.; TOMSON, R.; FAYNGOL'D, S.I.; BLONBERG, M., red.

[Synthetic detergents from shale oil] Sinteticheskie moiushchie veshchestva iz slantsevoi smoly. [By] Kh.IU.Voore i dr.
Tallin, Estgosizdat, 1964. 257 p. (MIRA 17:5)
1. Eesti NSV Teaduste Akadeemia. Keemia Instituut.

23-58-2-3/9

AUTHOR: Kull, A.T. (Kyll', A.T.), Candidate of Chemical Sciences,
Kudryavtsev, I.B., Rikken, V.A., Candidate of Technical
Sciences

TITLE: On the Sulfation of Oil-Shale Tar Olefinic Hydrocarbons
(O sul'fatirovani olefinovykh uglevodorodov slantsevoy smoly)

PERIODICAL: Investiya Akademii nauk Estonskoy SSR, Seriya tekhnicheskikh
i fiziko-matematicheskikh nauk, 1958, Nr 2, pp 105-117 (USSR)

ABSTRACT: The considerable content of olefinic hydrocarbons in the oil-
shale tar found in the Baltic States is the prerequisite for
obtaining synthetic detergents and wetting agents. A.T. Kyll
with his coworkers have proved the possibility of obtaining
surface-active substances, such as Namonoalkyl sulfates by
means of sulfoesterification with concentrated sulfuric acid
of olefinic hydrocarbons of dephenolized medium oil-shale
fraction. Experiments have shown that sulfoproducts obtained
from the oil layer, which is separated from the acid-layer,
have better surface-active properties than those originating
from acid-layers. Compared with "Teepol", a detergent produced
in France on similar principles, and DS-RAN, a detergent de-
veloped by Institut Nefti AN SSSR (Petroleum Institute AS USSR)

Card 1/2

On the Sulfation of Oil-Shale Tar Olefinic Hydrocarbons

23-58-2-3/9

by M.A. Geyman and A.Ya. Larin, the Estonian detergent is equal to the French product and surpasses the one produced in the USSR.

There are 4 tables, 8 graphs, 1 chart and 9 references, 4 of which are Soviet, 3 English and 2 German.

ASSOCIATION: Institut khimii Akademii nauk Estonskoy SSR (Institute of Chemistry of the Academy of Sciences of the Estonian SSR)

SUBMITTED: Jan 21, 1958

Card 2/2

- | | |
|-----------------------------|----------------------------|
| 1. Wetting agents - Sources | 2. Detergents - Sources |
| 3. Hydrocarbons - Sulfation | 4. Detergents - Evaluation |

RIKKEN V.A.

321. EXTRACTION OF PHENOLS FROM THE MIDDLE FRACTION OF SHALE OIL AND THEIR USE FOR SYNTHESIS OF OIL-SOLUBLE PHENOLFORMALDEHYDE RESINS. Rikken, V.A. (Tallin: Estonian Govt, 1956, "Oil shales: Chemistry and Technology," iss. 2, 203-212; abstr. in Ref. Zh. Khim. (Ref. J. Chem., Moscow), 1957, (10), 35319). Laboratory experiments showed that extraction of phenols from a middle fraction of shale oil with 0.995 specific gravity can be effected by treatment with a 15-20% aqueous solution of alkali at 65-85°C and subsequent settling at 65° or over. Increasing the concentration of alkali increases the percentage extraction, but it also increases the extent to which the phenolates are polluted with neutral oils, and the time taken by the phenolates to separate out from the oil. The percentage extraction of compounds containing OH groups from the oil is 75%. After trials of films of phenolformaldehyde resins made from the phenols, recommendations are made for improving the quality of the resins and their resistance to the atmosphere.

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4E3g

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RIKKEN, V. A.

Rikken, V. A. -- "Investigation of Methods of Isolating the Phenols of the Middle Fraction of Shale Tar with the Object of Using Them for the Synthesis of Phenoloformaldehyde Lacquer Resins." Min Higher Education USSR, Leningrad Order of Labor Red Banner Technological Institute Leningrad Soviet, Chair of the Technology of Lacquers and Paints, Leningrad, 1955 (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

S/023/60/000/004/004/005
D221/D305

AUTHORS: Eyzen, O., Candidate of Technical Sciences and
Rikken, Yu.

TITLE: On the chemical composition of oil-shale gasoline
sulphur compounds

PERIODICAL: Akademiya nauk Estonskoy SSR. Izvestiya. Seriya
fiziko-matematicheskikh i tekhnicheskikh nauk,
no. 4, 1960, 358-366

TEXT: The authors studied the group composition of sulphur com-
pounds of shale oil gasoline, identifying for the first time some
of the individual compounds. The amount of sulphur in oil is of
great importance for the oil industry: this question is being ex-
tensively studied in the Bashkir branch of the Academy of Sciences
of the USSR under the leadership of Professor R.D. Obolentsev with
the assistance of B.V. Ayvazov (Ref. 1: Raspredeleniye pryamoy

Card 1/7

On the chemical composition ...

S/023/60/000/004/004/005
D221/D305

gonki, vyrabatyvayemykh iz sernistykh neftey (Distribution of Straight-Run Distillation of Sulphur-Containing Oil, Coll.) Sb. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v nef-tyakh i neftoproduktakh (Chemistry of Organic Sulphur Compounds Contained in Crude Oil and Oil Products). Bashkir branch of AS USSR, M. 1959) and (Ref. 2: R.D. Obolentsev, A.A. Ratovskaya, K. voprosu o metode gruppovogo opredeleniya seraorganicheskikh soye-dineniy, predlozhenomu Bashkirskim filialom AN SSSR (On the Me-thod of Group Determination of Organic Sulphur Compounds, Sugges-ted by the Bashkir Branch of the AS USSR) Sb. Khimiya seroorga-nicheskikh soyedineniy, soderzhashchikhsya v nefti i neftoproduc-takh, Bashkirsk. filial AN SSSR, M. 1959), but up till now little has been done in this direction for shale oil of the Baltic oil shale basin. Previous works of A. Usk and I.G. Stoler (Ref. 3: Izyskaniye sposobov uluchsheniya kachestva slantsevogo benzina (Search for Methods of Improving the Quality of Shale Gasoline) Sb. Goryuchiye slantsy, Khimiya; Tekhnologiya, N2, AN ESSR, Tallin, 1956), and of P. Kogerman, K. Luts, Yu. Khyusse (Ref. 4: Khimiya

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S/023/60/000/004/004/005
D221/D305

On the chemical composition ...

estonskikh slantsev (Chemistry of Estonian Shale) ONTIGKhTI, 1934) deal mostly with the general content of sulphur in shale oil, a more detailed study had been made only by Kh.A. Silland (Ref. 5: O gruppovom sostave sernistykh soyedineniy slantsevoy smoly (On the Group Composition of Sulphur Compounds of Shale Pitch) Tr. Tallinsk. politekhn. in-ta, Ser. A. No. 97, 1957) and (Ref. 6: O posledovatel'nom opredelenii klassov sernistykh soyedineniy v slantsevoy smole (On the Consecutive Determination of Classes of Sulphur Compounds in Shale Pitch) Tr. Tallinsk. politekhn. in-ta. Ser. A, No. 97, 1957). The authors investigated gasolines from tars produced in tunnel furnaces, in chamber kilns, in carbonization installations with heat carrying solid agents and from generator tar; the general sulphur content in these tars was found to be in the range 0.7 - 1.1 % the largest being from the chamber kiln type. Samples of gasoline (15 - 30 kg) were rectified to narrow (1 - 5^o) fractions in a distillation column with a selectivity of 60 theoretical plates, 40 - 60 fractions from each rectification having been collected. The sulphur content was determined in the frac-

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On the chemical composition ...

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D221/D305

tions by means of the lamp method [Abstractor's note: The method is not described] and its distribution, depending on the distillation temperature showed definite maxima at 79 - 86°, 107 - 110°, 132 - 137° and 155 - 160°, with minima in between. These peaks of sulphur content are almost identical for all gasolines studied, which proves that they correspond to few individual compounds, whose presence depends directly on the composition and structure of the combustible material in the oil shale. From this observation it follows that for practical purposes, it is possible to free gasoline from sulphur compounds by its detailed rectification. The authors determined the group composition of sulphur compounds in fractions, corresponding to maximum and minimum sulphur contents by means of chromatography on silica- and alumina gels as absorbers. By this method the studied fractions were divided into paraffins and naphthenes, olefins, aromatic hydrocarbons and oxygen compounds. It was found that 75 % of sulphur compounds belong to aromatic hydrocarbons, the remaining 25 % being associated with

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oxygen compounds. Paraffins were free from sulphur, olefins contain it in very negligible quantities. The authors paid attention to determining compounds of the thiophene and disulphide series. The disulphide amount was determined by means of reduction in acetic acid solution and subsequent titration with silver nitrate (Ref. 6: Op.cit.). The amount of sulphide sulphur was determined by the Kh. A. Silland method (Ref. 6: Op.cit.) /Abstractor's note: Method not described/. The thiophene sulphur was determined by the method of L.S. Levitt and E. Howard (Ref. 14: Anal.Chem. 25, p.196. 1953) by oxidation with nitric acid to sulphuric acid and precipitation with barium chloride. Qualitative determinations of free sulphur, hydrogen sulphide and mercaptans were also carried out, with negative results which proves that sulphur compounds in crude gasoline do not decompose during the rectification process. The identification of individual compounds of the thiophene series were performed by infra-red spectral analysis in the case of gasoline from an installation with a heat-carrying solid agent, after its

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concentration by chromatography and in the case of chamber kilns gasoline directly after rectification. The analysis was carried out with the spectrograph IKS 14, in the range $2000 - 700 \text{ cm}^{-1}$ in potassium bromide basins, the thickness of the studied layer being in the range from 0.01 - 0.05 mm; time of exposition - 45 min. The following compounds were identified by this method: thiophene, 2-methylthiophene, 3-methylthiophene, 2-ethylthiophene, 2,3-dimethylthiophene and 2,5-dimethylthiophene. In the fraction 156 - 158°C of chamber-kiln gasoline, the presence of 3-isopropylthiophene was very probable. There are 2 figures, 6 tables and 17 references: 12 Soviet-bloc and 5 non-Soviet-bloc. The four references to the English language publications read as follows: L. Lundquist, Oil shale and Cannel Coal. vol. 2 London 1951 p. 621; S.W. Kinney, J.R. Smith, J.S. Ball, Anal. Chem. 24, p. 1749, 1952; C.J. Thomson, H.Y. Coleman, H.T. Rall, H.M. Smith, Anal. Chem. 27, p. 175, 1955; Howard D. Hartough, Thiophene and its Derivatives, 65

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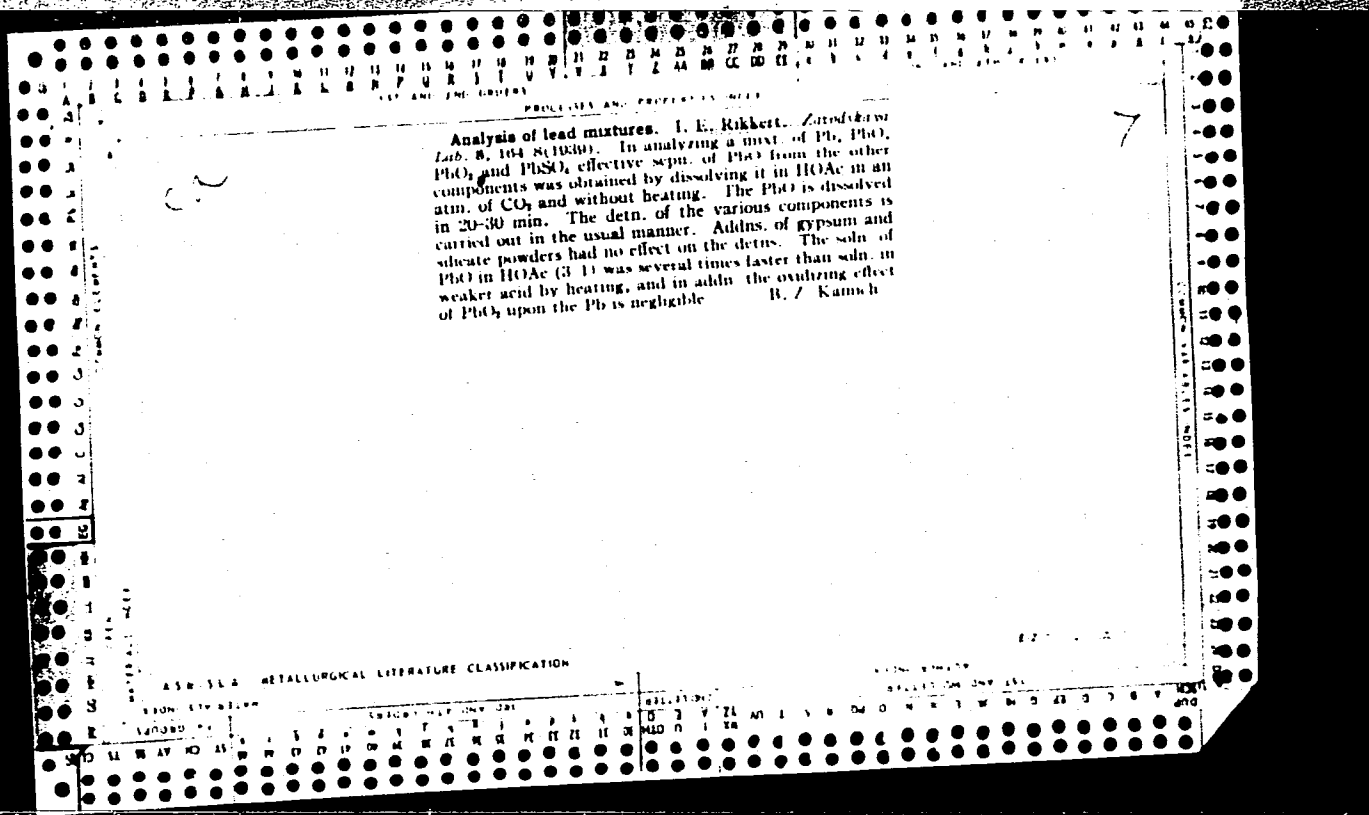
Interscience Publishers New York - London, 1952.

ASSOCIATION: Institut khimii akademii nauk Estonskoy SSR (Institute of Chemistry of the Academy of Sciences of the Estonian SSR)

SUBMITTED: February 27, 1960

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1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
BC													13-I-6																																						
<p>Electrolytic analysis of chromium ores. I. E. RIKKERT (Zavod. Lab., 1936, 8, 563-565).—1—3 g. of ore are warmed with 10—30 ml. of HClO_4-H_2SO_4 mixture (3—4 hr.), and the solution is evaporated to evolution of SO_3 fumes, diluted, and filtered. The residue of SiO_2 is ignited and the crucible is weighed before and after treatment with HF, when the difference in wt. gives the SiO_2 content. The residue is fused with KHSO_4, and the melt added to the filtrate from SiO_2. $(\text{NH}_4)_2\text{C}_2\text{O}_4$ is added, and the solution electrolyzed, with const. addition of $(\text{NH}_4)_2\text{C}_2\text{O}_4$, to complete deposition of Fe, Co, Ni, and Cu, when the deposit is dissolved in HNO_3, the electrode replaced, and electrolysis continued to complete oxidation of $\text{C}_2\text{O}_4^{2-}$. The electrolyte is acidified, boiled, and aq. NH_3 is added, to ppt. Al, Ti, and PO_4^{3-}. The washed ppt. is dissolved in H_2SO_4, H_2O_2 added, and Ti determined colorimetrically in the solution, from which Al and Ti hydroxides are pptd., ignited, and weighed; the Al content is derived therefrom. H_2SO_4 and standard aq. FeSO_4 are added to the filtrate after pptn. of Al and Ti, and excess of FeSO_4 not oxidized by CrO_4^{2-} and VO_4^{3-} is titrated. R. T.</p>																																																			
A.S.B. 3.1A METALLURGICAL LITERATURE CLASSIFICATION																																																			

Analysis of chromium ores by electrolysis I. E. Rikkers, *Zarodskaya Lab. 5, 593 (1936).* A soln. of ore in $\text{H}_2\text{SO}_4 + \text{HCl}$ is evaporated to fuming and freed from SO_3 . The soln. is treated with $\text{H}_2\text{C}_2\text{O}_4$ and electrolyzed. Fe, Ni, Co and any Cu are sepd. on the cathode, $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ and $(\text{NH}_4)_2\text{SO}_4$ remain in soln. and $\text{Al}(\text{OH})_3$ and $\text{Ti}(\text{OH})_3$ are pptd. The usual procedure in the sepd. and detn. of the components is followed. Chas. Blanc

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1ST AND 2ND ORDERS
 PROCESSES AND PROPERTIES INDEX
 100 AND 4TH ORDERS

B 1-4

Analysis of metallic antimony. I. E. RIKKERT
 (J. Appl. Chem. Russ., 1937, 10, 1122-1129).—A
 scheme for the analysis of Sb for Sb, Pb, Cu, Fe, Zn,
 Ni, and S is proposed.
 R. T.

COMMON ELEMENTS
 OPEN
 MATERIALS INDEX
 A58-514 METALLURGICAL LITERATURE CLASSIFICATION
 AUTHOR INDEX
 1ST AND 2ND ORDERS

PA 13/49T54

USSR/Medicine - Nervous System,
Physiology
Medicine - Frogs
May/Jun 48

"Formation of Biologically Active Substances in the
Central Nervous System of a Frog," A. V. Rikkl',
General Physiol Sec, Inst of Experimental Med, Acad
Med Sci USSR, Leningrad, 6 pp

"Fiziol Zhur SSSR" Vol XXIV, No 3

Reports experiments. Results show that biologically
active substances are formed in the brain of a frog
due to excessive stimulation. When the endings of
tr. vagosympathic are stimulated, the perineate
behaves similarly to acetylcholine. Substances
13/49T54

USSR/Medicine - Nervous System,
Physiology (Contd)
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similar to adrenalin are formed when the ending of the
trifacial nerve is stimulated.

RIKKL', A. V.

13/49T54

RIKKL', A.V.

Role of Pavlov's works in the field of digestive pathology and physiology
and formation of his theory on the higher nervous function. Fiziol. zh.
SSSR 37 no.5:519-527 Sept-Oct 51. (CML 21:4)

1. Leningrad.

LENKEVICH, M.M.; ANICHKOV, S.V., professor, deystvitelnyy chlen Akademii meditsinskikh nauk SSSR, zaveduyushchiy; RIKKL', A.V., professor, zaveduyushchiy.

Effect of phenadon on the conditioned protective-motor reflexes. Farm. i toks. 16 no.3:3-8 My-Je '53. (MLHA 6:7)

1. Otdel farmakologii Instituta eksperimental'noy meditsiny Akademii meditsinskikh nauk SSSR (for Lenkevich and Anichkov). 2. Akademiya meditsinskikh nauk SSSR (for anichkov). 3. Otdel obshchey fiziologii Instituta eksperimental'noy meditsiny Akademii meditsinskikh nauk SSSR (for Lenkevich and Rikkl'). (Conditioned response) (Drugs)

RIKKL', A.V.

[Role of the cerebral cortex in the regulation of digestive system functions] Rol' kory golovnogo mozga v regulatsii deiatel'nosti pishchevaritel'noi sistemy. Moskva, Izd-vo znanie, 1954. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniю politicheskikh i nauchnykh znaniy. Seriya III, no.25) (MLRA 7:12)
(Brain--Localization of functions) (Digestion)

BYKOV, K.M., otv.red.; RIKKL', A.V., red.izd-va

[Proceedings of the Fourth All-Union Conference on Problems
of the Physiology and Pathology of Digestion] Trudy Vsesoiuznogo
nauchnogo soveshchaniia po problemam fiziologii i patologii
pishchevarenia. Moskva, Izd-vo Akad.nauk SSSR, 1954. 398 p.
(MIRA 14:2)

1. Vsesoyuznoye nauchnoye soveshchaniye po problemam fiziologii
i patologii pishchevarenia. 4th, Moscow, 1951.
(DIGESTION--CONGRESSES)